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Subject: overloading powered speakers

Posted by [warwick](#) on Sun, 29 Apr 2007 01:48:55 GMT

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i do the live sound in a small club, system is 2 rcf powered speakers and a big old peavy sub, most gigs are lighter rock or jazz gigs and everything works fine. but occasionally metal bands play and the volume levels go way up and its a mission just getting the kick, bass and vox above the monstorous guitar and cymbal noise from the stage. i've read plenty of people talking about possible speaker damage from overdriven amps but cant find any clear information explaining the gain structure all the way from the desk to the speaker. if the powered speakers are set fairly low (5/10) but the desk is pushed as far as it can go are the speakers in danger? the built in limiters are certainly limiting, but im dont think im hearing distortion... just fairly ugly compression.if i were to drive the desk this hard into a system without limiters would it be more dangerous to the speakers?warwick

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Subject: Re: overloading powered speakers

Posted by [Bill Wassilak](#) on Mon, 30 Apr 2007 16:30:10 GMT

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::if the powered speakers are set fairly low (5/10) but the desk is pushed as far as it can go are the speakers in danger?Yes if you clip anything before the speakers the powered speakers are just going to amplifiy that clipped signal.:the built in limiters are certainly limiting, but im dont think im hearing distortion... just fairly ugly compression. You should be, the limiters are doing there job so you don't blow the speakers.:if i were to drive the desk this hard into a system without limiters would it be more dangerous to the speakers? Sure your sending clipped waveforms to the speakers, the only thing the amps are going to do is amplifiy the clipped signal.You definetly need more amps and speakers for metal bands.HTHBill W.

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Subject: Re: overloading powered speakers

Posted by [warwick](#) on Sat, 05 May 2007 23:59:31 GMT

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thanks, thats pretty much what i had originally figured - that the amps would just amplify clipped signal and not drive the speakers too hard. what had me a bit worried was a thing i read on a car audio site that said something about speaker cooling... as far as i understand it sending a clipped signal to the speakers means that they won't be moving in and out as much as they could be, but this movement not only makes the sound from the cone but also works to cool the coil, pushing hot air out and sucking cold air in... not a widely discussed phenomenon, you have any knowledge / tips regarding that one?w

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Subject: Re: overloading powered speakers

Posted by [Bill Wassilak](#) on Mon, 07 May 2007 16:23:35 GMT

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::thanks, thats pretty much what i had originally figured - that the amps would just amplify clipped signal and not drive the speakers too hard. Wrong, clipped signal's your sending straight DC voltage to the speakers. Which will make them hit there x-mechanical limits which would tear up your speakers.::what had me a bit worried was a thing i read on a car audio site that said something about speaker cooling... as far as i understand it sending a clipped signal to the speakers means that they won't be moving in and out as much as they could be.What there talking about in speaker cooling is reducing power compression. That's where the V.C. heats up, and raises the V.C. resistance, the more power you pour in there the less output you get because of the raised resistance and the extra power is given off in heat. See above the explanation for sending clipped signals to a speaker, clipped signals are no good on speakers and you can damage them a lot easier.Do a search for Wayne's cooling plugs, he explains what power compression is and how to reduce it.

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